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The North Suburban Library System decided that the areas within its boundaries which are outside the taxed district/area supporting an existing library should be served by extending the service areas of the existing municipal, township, and district libraries, either through contract or by employing the provisions of present library district law. In order to guide the expansion so that it results in maximum accommodation to potential library users, the System engaged a professional research organization to design the allocation of unserved areas to existing library facilities in a way that reflects the natural orientation and convenience of the population. The configurations resulting from such an allocation are termed "natural library service zones" - zones within which it may be presumed that residents are oriented toward the library within the zone rather than toward any other library. Part I of this report describes the working concepts and methodology used in deriving the natural service zones. Part II, in the form of an annotated map, depicts the boundaries of the zones. Appendixes include: (1) details of a survey of 300 library users, conducted to verify the applicability of conventional retail location theory, (2) information on the delineation of retail trade areas, and (3) data from a survey of interstitial areas. (Author/JB)

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NATURAL LIBRARY SERVICE ZONES

A report to the North
Suburban Library System,
February, 1969

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Institute of Urban Life

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NATURAL LIBRARY SERVICE ZONES

A report to the North
Suburban Library System,
February, 1969

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PART I

DISCUSSION

INTRODUCTION

This report sets forth estimates of the "natural" library service zones for areas within the boundaries of the North Suburban Library System but which are outside the taxed district/area supporting an existing library.

Part I of this report describes the working concepts and methodology used in deriving the natural service zones. Part II, in the form of an annotated map, depicts the boundaries of the zones as generated by the methodology.

There are 28 public libraries presently constituting the membership of the North Suburban Library System. An additional four public libraries, three having boundaries that are contiguous with the system's boundaries, are eligible for membership, but these have not at present chosen to affiliate.[1] These libraries are generally located according to patterns of suburban municipal development that arise from the pre-World War II network of suburban rail communications and bear only accidental relationship to postwar patterns dominated by the automobile. Moreover, these libraries are at uneven levels of development because they are supported by taxing bases of widely varying population.

Twenty of these libraries are limited in their present bases to existing municipalities.[2] And consequently, there exists a substantial and wonderfully irregular pattern of areas out-

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[1] For a list of the member libraries, see Appendix A. The four non-member libraries are Zion, North Chicago, Lake Bluff and Highland Park.

[2] That is, 20 are organized as Village or City libraries; of the remaining eight, five are township libraries and three are district libraries.

side the legal service area of any existing library.

Trends in the financing aspects of public libraries argue strongly against the establishment of new additional libraries to fill in these gaps in the north suburban areas of coverage. While on the one hand the costs of books and other materials and the salary scales of professionally-trained librarians have risen sharply in the past several decades, at the same time the services rendered by libraries have become more complex and costly--both as the result of the introduction of newer forms such as films, tapes, records, and graphics, and because our increasingly-educated population is demanding more and more varied materials per capita than ever before. It is extremely difficult, then, for a public library with a relatively small population base (such as would be the case in the unserviced areas here) to generate the initial construction and operating revenues necessary to operate a high quality library. Recognizing this fact, the American Library Association no longer publishes guidelines and standards for small public libraries, and urges the development of cooperating library systems.[3]

Natural Library Service Zones.

Given this background, the governing body of the North Suburban Library System has determined that the establishment of additional new library units in the area is not practical. It has determined rather to seek to close the gaps by encouraging the extension of the service

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[3]For a persuasive discussion of this problem, see American Library Association, Minimum Standards for Public Library Systems (Chicago; the Association, 1967), esp. pp. 8-14; and "Cost of Public Library Services: 1968," reprinted from Just Between Ourselves, Oct., 1968.

areas of the existing municipal, township, and district libraries by the application of existing legal authority, primarily either by employing the provisions of the Public Library District Law or by entering into a contract with a municipal body having authority to levy a tax for public library purposes.

At the same time, the governing body of the North Suburban Library System desires to guide that expansion so that it results in maximum accommodation to potential library users. Accordingly, it requested the Institute of Urban Life to design an allocation of unserved areas to existing library facilities in a way that reflects the natural orientation and convenience of the population.

The configurations resulting from such an allocation are termed here "natural library service zones" -- that is zones within which it may be presumed that residents are oriented toward the library within the zone rather than toward any other library.

Operating Qualifications.

The operating definition of natural library service zones, as used in this report, is further qualified in four ways:

1. Existing differences in the level of library services provided by existing libraries have been ignored. One assumption underlying this qualification is that as existing libraries expand their fiscal base through expansion of the taxed area, they will continue to seek and meet levels of service desired by and appropriate to their constitutents. A second assumption is that the population growth expected throughout the North Suburban Library System area in the next two decades will provide more uniform assessment bases for the various libraries, and the differences in levels will become insignificant. Added to these assumptions is the practical difficulty of defining and measuring "level of library service" in any way that would be valid for this study.

2. No attempt has been made to distinguish in the construction of natural zones between the orientation of citizens who are highly motivated to use public libraries and those who are not. It is conceivable that the former could be distinguished from the latter; and that zone boundaries constructed with frequent users in mind would be substantially different from boundaries constructed with marginal users in mind. This distinction has been ignored partly because one of the long range objectives of the North Suburban Library System is to increase the frequency of library use and thus to convert non-users and marginal users into frequent users; and partly because it is precisely the marginal users for whom the criterion of convenience is most meaningful: highly-motivated users will tolerate considerable travel inconvenience. Hence, the criterion of convenience, as defined and used here, applies to the general population, and not to the unspecified proportion of intensive library users.

3. The sole focus of the study is upon borrowers. The habits and travel patterns of reference users have not been considered here. By long and virtually universal custom, the reference services of public libraries are available to all users regardless of place of residence; and in addition, reference service may be obtained by the telephone, in which case there customarily is no identification of the residence of the reference user. Thus reference service bears no practical relationship to the problem of defining a library service area.

4. Natural library service areas, as defined here, are limited to the territory within the boundaries of and therefore the responsibility of, the North Suburban Library System.[4] Thus any potential orientation across these boundaries has been ignored. This is true whether the orientation is from an area within the system boundaries to a library outside, or from an area outside the System boundaries to a library within.

RETAIL LOCATION THEORY AS A MODEL

Since it is axiomatic that residents of the presently unserved areas would almost inevitably travel to existing library locations by automobile, the problem of discovering the natural orientation of those residents is intimately tied to their customary automobile trip patterns.[5]

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[4]The "Plan for the establishment of Illinois Regional Library System No. 5" (North Suburban Library System), revised July 11, 1966, sets forth one of the objectives of the system: "To develop library resources and services, available to every community in the region, which are beyond the scope of any individual community."

[5]The survey of library users discussed below reveals that 90 per cent of borrowers come to the library in automobiles. The figure may be somewhat less in the densely-settled lake shore communities.

The most straightforward method of establishing orientation, then, would be simply to plot automobile travel time outward from existing libraries, and draw natural service area boundaries at lines of automobile-travel equidistance between each library.

However, the majority of existing libraries in the study area are located adjacent to or near shopping centers--a practice long and wisely encouraged in library location theory, on the premise that the "draw" of a shopping center reenforces the "draw" of a library.[6] This fact suggests that there might be a more complex relationship between automobile trips to the library and automobile trips for other purpose than simply distance: one which is influenced by the unequal drawing power of associated shopping centers.

The Character of Vehicle Trips to the Library.

To discover whether, and to what extent, retail location theory might be applicable to typical library trips in the area, a mail questionnaire was administered to a random sample of library borrowers at three System libraries during typical weekdays and Saturdays in November. The three sample libraries were selected as being representative of potentially different automobile circulation patterns, and at the same time as being representative of such library characteristics as annual circulation and proportion of juvenile holdings. A detailed description of the methodology of this selection, involving an examination of the annual reports of all 28 affiliated libraries, as well as the detail of the subsequent methodology of the User survey, is contained in Appendix A.

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[6]As used here, "shopping centers" refer to the lesser-sized shopping complexes, usually without department stores, that provide such "convenience" lines as drugs, groceries, hardware, and sundries. The major retail centers, such as Old Orchard, Randhurst, Golf Mill, present a different "draw" pattern, and are not considered.

A single mailing to borrowers randomly selected from the day's borrowers files at these three libraries yielded a 66 per cent response rate--in itself reflecting an extraordinarily high interest in the subject among present library users. Both a careful examination of the results from the different libraries and the unambiguous nature of the major finding indicate that no substantial biases were represented in the response, and they may be used with singular confidence as representative of the library user population as a whole.

The questionnaire administered to library patrons elicited detailed information on all of the stops which were made during the course of the automobile trip that brought them to the library. The information was coded for analysis in two ways:

1. A distinction was made between destinations commonly associated with shopping centers and those that are apt to be distributed more randomly throughout the area. Examples of the former are grocery, drug, and hardware store purchases; examples of the latter are trips to a bank, church, school or community function, or social visits to friends and neighbors.

2. An attempt was made to discover which stops were "necessary." Respondents were asked to indicate which of the stops made during the library trip could have been put off to another day. This enabled a crude distinction to be made between trips that were generated by library use and stops at the library that were generated by other trip purposes.

Table 1. CHARACTER OF STOPS DURING AUTOMOBILE TRIP THAT INCLUDED A STOP AT THE LIBRARY

CHARACTER OF TRIPS		PER CENT
A. Library A "Necessary" Stop*		39
Single Purpose: Library only stop	17	
Library only necessary stop among others	5	
Library one of several necessary stops	17	
B. Library Not A "Necessary" Stop, Others Were		42
Necessary stops included shopping-center	23	
Necessary stops did not include shopping-center	19	
C. No Stops "Necessary"		19
Included shopping-center	16	
No retail shopping-center	3	
	100	100

*"Necessary" defined by respondent as a stop that "had to be made that day (i.e., couldnt be put off until another day.)"

The results are displayed on Table 1. For about one out of six borrowers (17 per cent) the library stop was the only stop on the trip. Somewhere between 39 per cent and 58 per cent of trips by library borrowers were generated by the library purpose (that is, all of the trips classified under section "A" of Table 1, where the library was a "necessary" stop, and at least some of the trips classified under Section "C", where no stops were necessary). Approaching the data in another way, about 42 per cent of borrowers made trips in which the library was incidental to another purpose (Section B of Table 1), and about 39 per cent of borrowers made trips in which there were any stops involving a shopping-center function (appropriate lines of Section B and C of Table 1).

These findings were consistent for each of the three libraries independently; and the only systematic difference between weekday and Saturday patterns was that there was a slightly greater tendency for generally "unnecessary" trip (Section C of Table 1) to occur on Saturday. The later tendency seems intuitively correct, since it is likely that trips that can be put off are accumulated for the Saturday chores.

The major finding, then, of this phase of the research is that shopping-center trips to the library are about equally divided in importance with single-purpose and non-shopping center trips.

The Strategy for Defining the Zones.

If we can conceive of the typical library borrower in the unserved North Suburban Area as stopping at the library about half the time during shopping-center oriented trips and about

half the time during randomly-distributed trips, then it follows that maximum convenience is met under two simultaneous conditions:

1. If the library is in the pattern of the resident's customary retail shopping routes; and

2. If it is the closest of all surrounding libraries.

The major strategy of this study, then, is to identify the perimeters around each System library for each of these two criteria, and draw boundary lines for the natural service zones that conform to one or preferably both of these citeria.

Specifically, the perimeters for the two criteria were defined as follows:

1. The perimeters for the retail shopping routes were constructed by indentifying the primary service areas for each retail shopping center located contiguous to a System library. The methods used were those usually employed in conventional retail locational analysis, involving simultaneous consideration of the size of the shopping centers and the distance between them. A detailed description of this methodology is attached as Appendix B.

2. The perimeters for the proximity criteria were constructed by drawing auto travel distance lines between each of the existing System libraries in order to determine, for each point in the area, the library that is closest in terms of automobile travel. All primary and secondary roads were utilized in this analysis; but no allowance was made for points of relative congestion along the many travel paths, since these minor differences would not substantially alter the results.

Drawing the Final Service Zone Boundaries.

Maximum convenience has been defined as a congruence of these two indices--retail trade areas and automobile travel distance. As it happens, a substantial part of the unserved portions of the North Suburban area do not meet this standard of maximum convenience--that is, they may lie within the trade perimeter of one library and yet be closer, in terms of travel time, to another library, or they may lie at the outer margins of both retail trade

and automobile travel perimeters and not clearly within either. The translation of the two sets of perimeters into final natural library service zones proceeded according to the following priorities:

1. Where the two sets of perimeters were approximately congruent, these perimeters were assumed to define the boundaries of the natural library service zone.

2. Where the two sets of perimeters were not approximately congruent, one of two further measures was employed:

   A. If the interstitial area between the two sets of perimeters involved substantial population settlements, a questionnaire was administered to a random sample of registered voters in order to determine the dominant vehicle trip orientation of the interstitial area. This survey is discussed in detail below.

   B. If the interstitial area did not involve a substantial population settlement, the auto travel distance perimeter was assumed to delineate the boundaries of the natural library service zones. In these cases, the costs of surveying the population would not have yielded commensurate results. An the auto travel distance line is the more meaningful of the two measurers, since it is unambiguous, while it is in the nature of retail trade boundaries that they are imprecise at the extremes.

The Survey of Interstitial Areas.

Five discrete areas of substantial settlement lay in interstitial areas between auto-travel distance lines and retail trade boundaires. For each of these five areas, a random sample of approximately one hundred was drawn from the list of registered voters, and mail questionnaires were administered which elicited information on the most recent retail trip, on the location of family bank, physician, and church, and on the community newspapers regularly read. The response rate on this questionnaire, from an initial and one follow-up mailing, was upwards of 50 per cent. The data were coded and tabulated to produce an indication of the major vehicle orientation of the area. The detailed methodology of this survey is

attached as Appendix C. Standard error for samples of this size was computed at ±8 per cent on a reported proportion of 25 per cent--more than adequate for present purposes.

Limiting Considerations.

The natural library service zones delineated in Part II represent one rationally-defined, objective, solution to the problem of allocating unserved areas to existing library facilities. There are other considerations, equally rational and objective, that could bear on solutions to individual problems. Among these, by way of illustration and not to exhaust the universe of possibilities, are: (1) available land, space, or other technical considerations may not be appropriate to the expansion of a given library's facilities to the degree that the Natural Library Service Zone boundaries indicate; (2) modifications may be desired to increase congruence with school districts; and (3) some areas of population concentration, although clearly tied to a given library community by retail trade and vehicle trip patterns, may be unwilling to accept a political indentification with the community implicit in affiliating with the tax base of its library. No evidence of such difficulties was indentified in the course of this study, but that alone does not rule out the possibility that they exist.

Non-Resident Card Holders Not Analyzed.

The decision to opt for discovery of the convenience patterns of the general population excluded meaningful use of one available source of data that it is well to mention here: the records of non-resident card holders at existing libraries. Dot maps could have been created from the addresses of the 14,000 non-resident card holders within the North Suburban area, and zones of influence derived from inspection of these dot maps. But such zones might have failed to meet two of the basic criteria of the study:

1. The non-resident patterns are quite probably dependent on differences in existing levels of library service and in non-resident fees between adjacent libraries. It seems reasonable that a patron who is required to pay a non-resident fee will tend toward the library with the most facilities and the least expensive fee.

2. The non-resident patterns may very well reflect a different level of motivation for library use than would be found in the general population. And it is at least possible that patrons with this level of motivation might present misleading evidence about the trip patterns and natural area orientation of the average citizen.

There is some evidence from the data collected in the User Survey that non-resident users are more highly motivated. The records of the three libraries involved in the survey indicated that an aggregate of 8 per cent of all card holders in these three libraries were non-resident. The sample of borrowers at these three libraries contained 14 per cent non-residents. Moreover, among non-residents in the sample, 48 per cent reported that they had withdrawn a book about a week earlier; while among residents, only 42 per cent so reported. These two statistics suggest that non-residents are at least as frequent, if not more so, in their use of libraries as are residents, despite their presumed greater distance from the library than residents.

PART II

MAP: NATURAL LIBRARY SERVICE ZONES

NATURAL LIBRARY SERVICE ZONES

The end-product of this report is the attached map of Natural Library Service Areas within the boundaries of the North Suburban Library System.

Legal Service Area.

Existing legal service areas are displayed in gray shading, and are presented as precisely as the scale of the map and available data on most recent municipal annexations would allow. The display is intended to present the legal service areas (and municipal and township boundaries between adjacent ones) as they presently exist; and imprecisions due to scale or other mapping errors should not be construed as a recommendation for alteration of the boundaries between adjacent existing legal service areas.

There are four areas displayed on the accompanying map which are served by two adjacent libraries of different organizational form. These areas are designated by darker shading and identified by arabic numerals as follows:

Area 1: served by the Elk Grove municipal library and the Schaumburg township library;

Area 2: served by the Rolling Meadows municipal library and the Schaumburg township library;

Area 3: served by the Prospect Heights district library and the Arlington Heights municipal library;

Area 4: served by the Prospect Heights district library and the Mount Prospect municipal library.

North Suburban Library System.

The perimeter of the North Suburban Library System is displayed in a heavy dotted line, and contains within it all the townships assigned to the System at the time of preparation of the report.

Natural Library Service Zone Boundaries.

The boundaries of the Natural Library Service Zones, as defined and derived in Part I of this report, are presented in a lighter dotted line. But these boundaries should be construed as having three components:

A. Where the dotted line does not separate existing legal service areas and does not run along the edge of any legal service area, it represents the boundary of the Natural Library Service Zone.

B. Where the dotted line runs along the boundary of an existing legal service area on one side alone, it may represent the boundary of the Natural Library Service Zone; but in many cases it merely represents a limit on that zone imposed by existing municipal/township boundaries. For example, where an existing library facility lies very close to the border of its legal service area (as in the case of the library at Fox Lake), its natural library service zone may extend well into the legal service area of an adjacent library. However, the premise of this report is that existing legal service areas were to be followed in all cases, and the library service zone boundaries on the accompanying map reflect this fact.

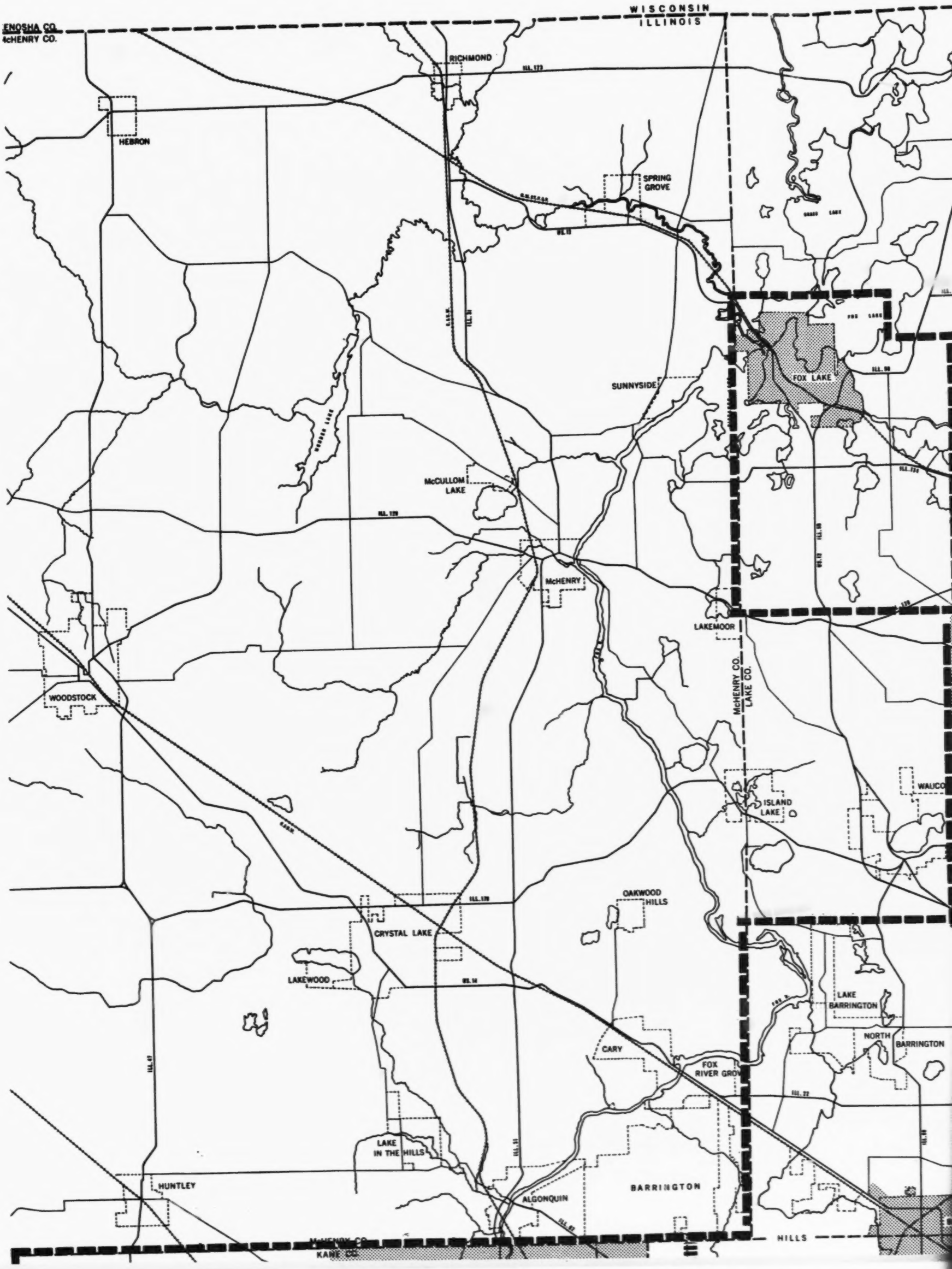
C. Similarly, where the dotted line is the boundary between adjacent legal service areas, it in fact follows the municipal/township limits that separate the adjacent legal service areas, rather than the natural library service zone boundaries.

Precision of the Boundaries.

The boundaries of the Natural Library Service Zones as presented here should not be construed as precise. Whether based on retail service areas, automobile travel distance, or any other measure, it is in the very nature of such zones that they become ambiguous at the extreme ranges. Much as the needle of a compass becomes confused as it approaches the North Pole, the proportion of citizens who are oriented to the closer of two transportation centers decreases as one approaches the boundary between the two centers. For portions of the accompanying map, the Natural Library Service Zone boundaries follow natural barriers such as rivers or tollroads which are well defined. In most cases, however, the shifting of a boundary a few hundred yards in either direction would not be substantially at variance with the underlying data.

Survey of Interstitial Areas.

The attached map also identifies, with capital letters, the five sites of the survey of interstitial areas. For a detailed explanation of these areas, see Appendix C.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4cHENRY CO.
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ILL. 173
HEBRON
SPRING GROVE
ILL. 59
ILL. 31
FOX LAKE
ILL. 83
SUNNYSIDE
McCULLOM LAKE
ILL. 120
McHENRY
LAKEMOOR
McHENRY CO.
LAKE CO.
WOODSTOCK
ISLAND LAKE
WAUCO
ILL. 176
OAKWOOD HILLS
CRYSTAL LAKE
LAKEWOOD
ILL. 14
LAKE BARRINGTON
NORTH BARRINGTON
CARY
FOX RIVER GRO
ILL. 22
ILL. 47
LAKE IN THE HILLS
ILL. 31
HUNTLEY
ALGONQUIN
BARRINGTON
ILL. 62
McHENRY CO.
KANE CO.
HILLS

KENOSHA CO.
LAKE CO.
ANTIOCH
WINTHROP HARBOR
ZION
OLD MILL CREEK
WADSWORTH
LAKE VILLA
LINDENHURST
WAUKEGAN
THIRD LAKE
ROUND LAKE BEACH
GURNEE
ROUND LAKE
ROUND LAKE PARK
GRAYS LAKE
HAINESVILLE
GAGES LAKE
WILDWOOD
PARK CITY
NORTH CHICAGO
GREAT LAKES
DOWNEY HOSPITAL
OAK GROVE
D
LAKE BLUFF
LIBERTYVILLE
MUNDELEIN
LAKE FOREST
METTAWA
FORT SHERIDAN
HAWTHORN WOODS
LONG GROVE
HIGHWOOD
LAKE ZURICH
C
NORTHBROOK
BANNOCKBURN
HIGHLAND PARK
KILDEER
B
DEER FIELD
RIVERWOODS
BARRINGTON
DEER PARK
LAKE CO.
COOK CO.

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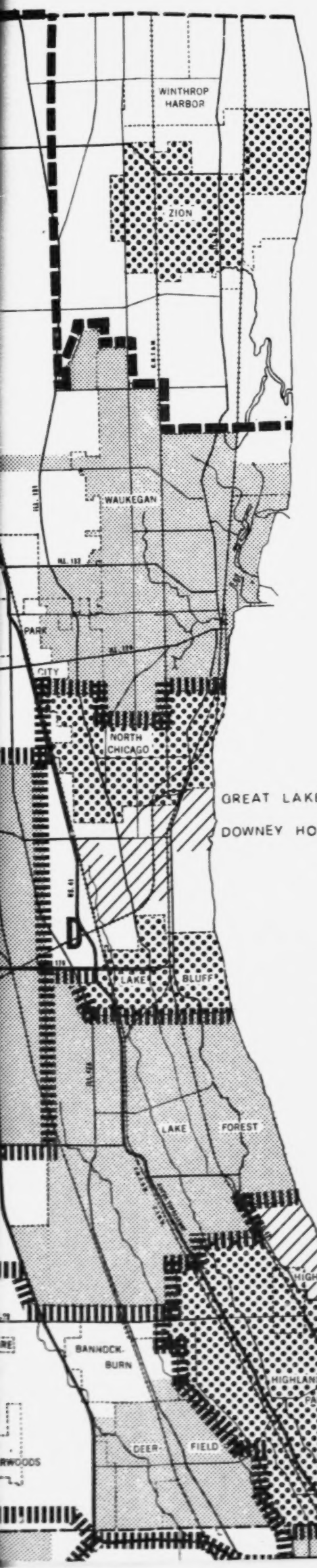


NATURAL LIBRARY SERVICE ZONES

North Suburban Library System

PRESENT LEGAL SERVICE AREAS OF SYSTEM LIBRARIES

PRESENT LEGAL SERVICE AREAS OF LIBRARIES NOT AFFILIATED WITH SYSTEM

MILITARY RESERVATIONS

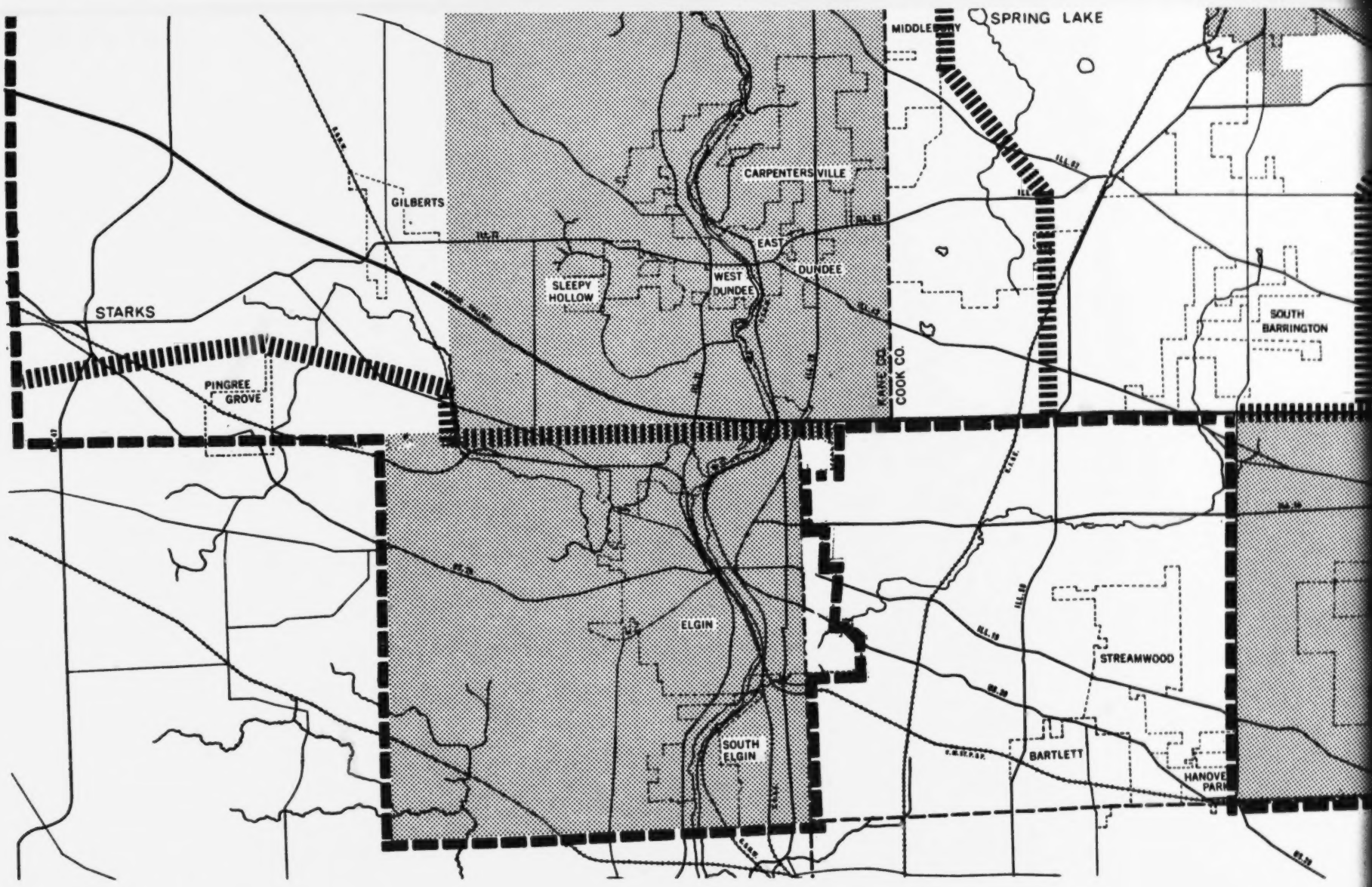
NORTH SUBURBAN LIBRARY SYSTEM BOUNDARIES

NATURAL LIBRARY SERVICE ZONE BOUNDARIES

1 AREAS OF MULTIPLE SERVICE (SEE TEXT)

A SITES OF SURVEY OF INTERSTITIAL AREAS (SEE TEXT)

Institute of Urban Life
Chicago, Illinois, February, 1969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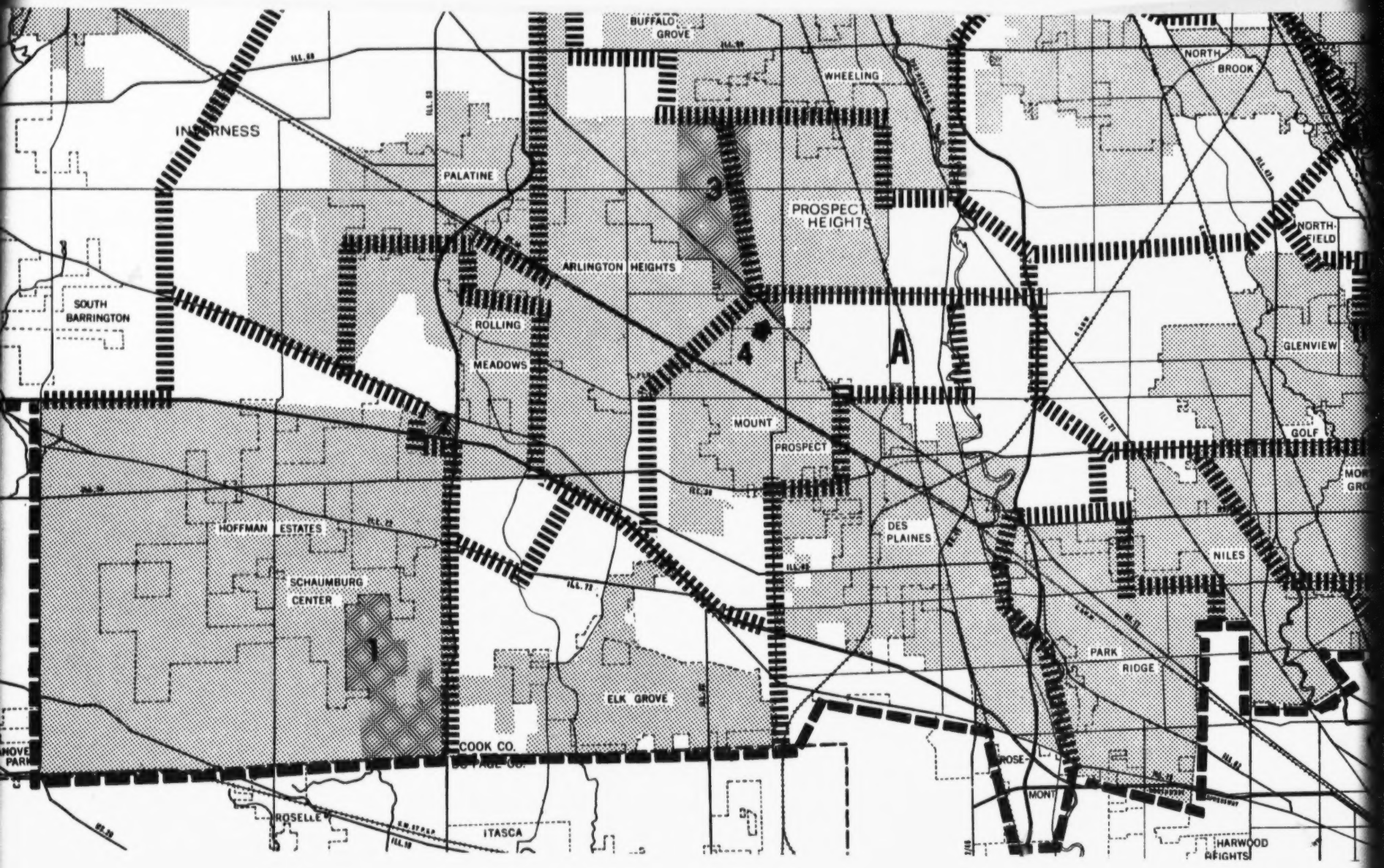
KANE CO.
COOK CO.
SOUTH BARRINGTON
ELGIN
SOUTH ELGIN
STREAMWOOD
BARTLETT
HANOVER PARK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WHEELING
NORTH BROOK
INVERNESS
PALATINE
PROSPECT HEIGHTS
NORTH-FIELD
ARLINGTON HEIGHTS
SOUTH BARRINGTON
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GLENVIEW
MOUNT PROSPECT
GOLF
HOFFMAN ESTATES
DES PLAINES
NILES
SCHAUMBURG CENTER
PARK RIDGE
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COOK CO.
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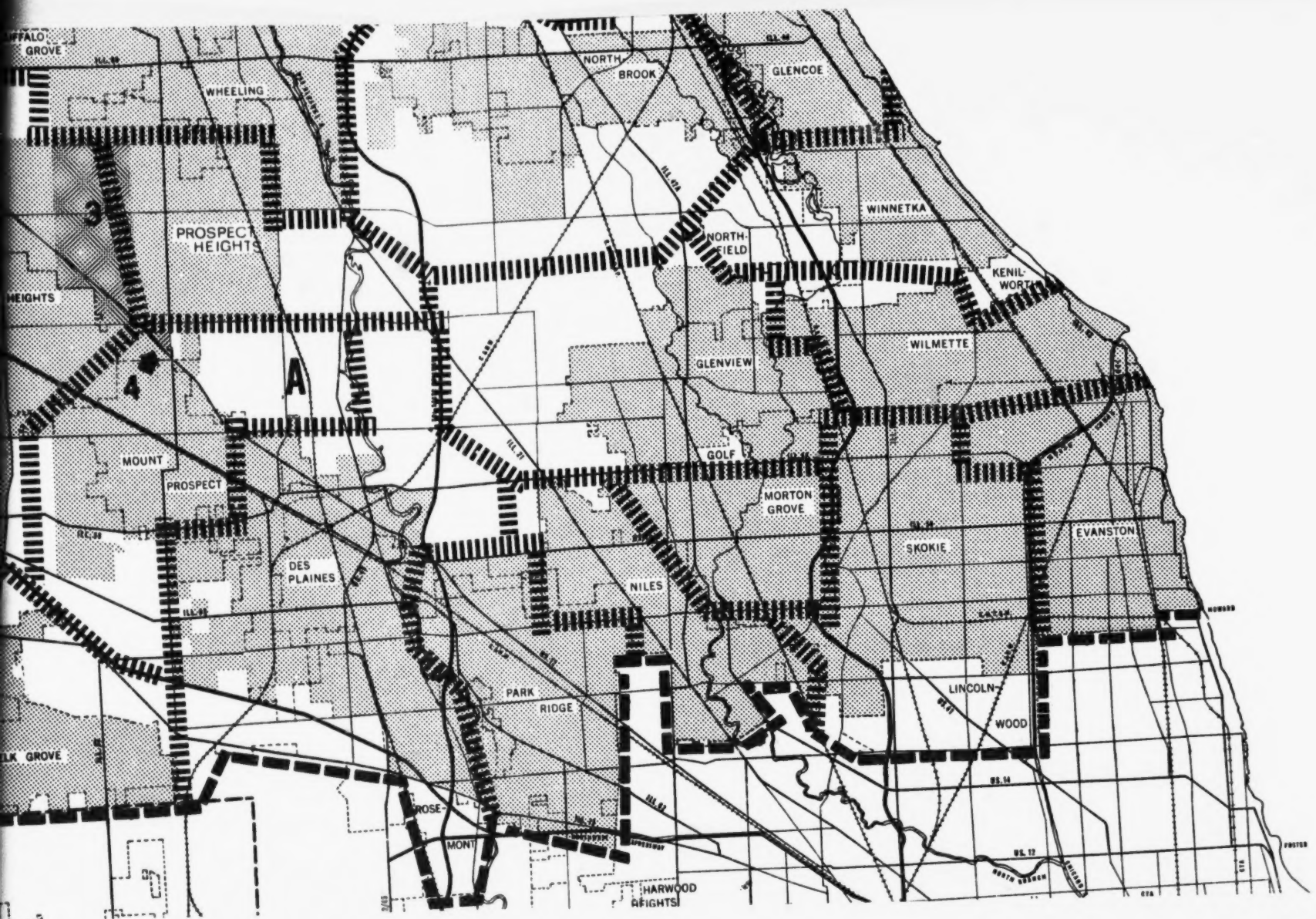
BUFFALO GROVE
WHEELING
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GOLF
MOUNT PROSPECT
MORTON GROVE
SKOKIE
EVANSTON
DES PLAINES
NILES
PARK RIDGE
LINCOLN-WOOD
ELK GROVE
ROSE-
MONT
HARWOOD HEIGHTS
FOSTER
3
4
A

APPENDICES

APPENDIX A

SURVEY OF LIBRARY BORROWERS

Sample Design

A sample of approximately 300 library users in the North Suburban Area was drawn in order to verify the applicability of conventional retail location theory to the automobile trip habits of library users in the unserved areas.

The sample was of a two-stage type, in which the first stage involved the selection of three libraries, and the second stage involved a random sampling of borrowers from those three libraries on a weekday and a Saturday.

First Stage

The selection of the three libraries for the first stage of the sample was guided by the following criteria:

(1) The selected libraries should be representative of the different geographical patterns of the area that might affect automobile travel patterns. Accordingly, all the member libraries in the area were assigned to one of three groups:

A. Predominantly Rural: libraries where the apparent surrounding draw area, outside the municipality in which the library is located, is predominantly rural or semi-rural in character.

B. The North Axis: libraries along or proximate to the shore of Lake Michigan, where shopping or other vehicle patterns might be influenced by the availability of the relatively densely-settled older communities on the shore.

Table A-1: CHARACTERISTICS OF LIBRARIES IN UNIVERSE AND SAMPLE

Library[1]	(1) Involvement Index	(2) Annual Circulation	(3) Per Cent Non-Resident	(4) Per Cent Juvenile
Group I: Rural				
Barrington*	100	82.4	20	44
Fox Lake	100	9.7	24	56
Elk Grove	80	136.0	N.D.	N.D.
Libertyville	70	160.7	5	67
Dundee	50	228.5	N.A.	58
Schaumburg	50	111.9	...	N.D.
Mundelein	25	62.0	1	70
Elgin	10	204.4	9	44
Group II: North				
Deerfield	70	106.7	4	49
Glenview	60	267.1	8	50
Northbrook*	60	144.2	3	55
Waukegan	60	398.8	2	59
Winnetka	50	190.4	3	47
Wilmette	40	417.1	1	49
Lake Forest	30	111.2	1	38
Skokie	20	505.9	1	50
Glencoe	10	118.7	1	36
Group III: Northwest				
Palatine*	75	187.0	5	46
Des Plaines	70	310.8	4	54
Rolling Meadows	50	79.5	...	N.D.
Wheeling	40	73.0	1	55
Mount Prospect	35	263.0	1	54
Morton Grove	35	172.8	...	57
Niles	25	188.6	...	64
Arlington Heights	20	290.1	1	55
Prospect Heights	15	43.3	5	N.D.
Park Ridge	15	308.3	1	51

*Libraries in sample. For detail of the indices and groups, see text.
... = Less than 1%
ND = No Data
NA = Not Applicable

Note 1: Evanston not included, see text.

C. The Northwest Axis: libraries other than those classified as rural, and not along the lake shore. These libraries tend to cluster along the northwest diagonal of the right-of-way of the Chicago and North Western northwest suburban line, and are characterized by clusters of older settlements in the vicinity of suburban rail stops and newer settlements interspersed with undeveloped land in the interstices. A high proportion of small shopping centers and highly irregular municipal boundaries are characteristic of this group.

The assignment of member libraries to these three groups is displayed in Table A-1.

(2) The selected libraries should themselves be heavily involved in the unserved areas. An Involvement Index was developed, which is the percentage of existing legal service area circumference that fronts on unserved areas which are within the system's boundaries. This percentage was derived from visual inspection of maps displaying the legal boundaries of member libraries. The Involvement Index is displayed in column (1) of Table A-1, and the libraries are arranged in descending order of involvement.

(3) The selected libraries should service a large enough group of non-resident borrowers to permit comparison of resident and resident borrowing patterns. The percentage of non-resident to total card holders was obtained from the Annual Reports for 1968 of the member libraries.[1] This percentage is displayed on column (3) of Table A-1.

(4) The selected libraries should be roughly representative by size. For this measure, the annual circulation of each library was obtained from the 1968 annual reports. This figure, expressed in thousands of volumes, is displayed on column (2) of Table A-1.

(5) Assuming that the "mix" of juvenile and adult holdings might be a factor in the analysis, the libraries selected, as a whole, should roughly represent that mix. This was considered the least critical of the factors, but one whose impact was unknown. The proportion of juvenile to total volumes circulated during the previous year was calculated from the 1968 annual reports, and is presented in column (4) of Table A-1.

---

[1] This is the report filed during calendar 1968, for the year ending prior to July 1, 1968. The 28 libraries vary widely in the precise terms of their reporting years: some end on June 30th, some on March 31st, some on December 31st.

As a working strategy, it was determined to select the library in each group with the highest Involvement Index, unless there were cogent reasons to do otherwise and unless such a selection would result in a serious imbalance on the size or juvenile measures. Evanston was excluded from the sample universe because it has a zero Involvement Index and because its nearly one-million annual circulation places it in a clearly atypical category.

From the north group, Northbrook was selected. Three of the four libraries with the highest degree of involvement in this group are, like Northbrook, inland and less densely-settled than the communities on the lake shore. Northbrook offers a sizeable number of non-resident card holders and ranks 6th of nine libraries in the group in terms of size, and 2nd of nine in terms of juvenile holdings.

From the northwest group, Palatine was selected. It has the highest degree of involvement and one of the highest proportions of non-residents. It ranks 6th of 10 in size, and is the lowest of per cent juvenile--although in this group the differences are minimal except for Niles.

In sum, then, the three selected libraries represent three different transportation geographies, are all high in per cent of non-residents, and are middle to lower-middle in size. One of the libraries ranks high, one middle and one low, on per cent juvenile.

Second Stage

In the second stage books drawn on a Wednesday and on a Saturday were sampled at each of the three libraries in order to produce a sample of borrowers. The sampling process was strictly random, designed to produce approximately 50 respondents at each library for each sample day.

Since the sampling design was based upon books drawn, rather than on borrowers (to save an enourmous amount of time), it may slightly overrepresent borrowers who typically draw a large number of books. But spot checks at each of the sampled libraries indicated that such overrepresentation was quite small, and would not alter the findings of the survey in any measurable way.

Two forms of a covering letter and questionnaires were prepared--one for holders of adult cards and one for parents of holders of juvenile cards.

The questionnaires, with stamped return-addressed envelopes, were mailed on the first library working day following the day of withdrawal, and respondents normally received their questionnaires on the second or third day following withdrawal. Copies of the covering letters and questionnaires are attached to the end of this appendix.

The overall response rate to these questionnaires was 62.2 per cent, distributed rather uniformly both as to library and day, as the following table shows:

Library	Wednesday	Saturday
Barrington	66%	47%
Northbrook	60%	59%
Palatine	68%	62%

This is an extraordinarily high response rate for a single-mailing survey. Preliminary examination of the characteristics of respondents as discussed below and the consistency of the findings led to a decision that a follow-up mailing to non-respondents was not necessary.

The final tabulations presented in the text and in the following appendix tables were based upon a weighting system typically used in sample survey designs. There were two classes of weights. The first of these was the "day" weight: since only one of five weekdays was sampled, all responses for the Wednesday were multiplied by a weight of 5.0. The second class was the sample weight: since each library was sampled at a rate of approximately 50 (in order to decrease sampling variability when analyzing the data by individual libraries), the responses at each library for each day were weighted to represent the actual number of withdrawals for the day at that library. Neither of these weighting procedures interferes with the randomness of the sample.

Non-Automobile Trips

Since the conception of the study called for an examination of automobile trips, it was necessary to withdraw from analysis those respondents who came to the library by other than auto--in all cases by bicycle or on foot. These non-auto trips represented 9.0 per cent of the total.

There was no very large difference on the non-auto trips between libraries, although they tended to occur four times as frequently on Saturdays as on weekdays, as the following table illustrates:

Proportion of non-auto trips

By Library:		By Day:	
Barrington	15%	Wednesday	5%
Northbrook	7%	Saturday	21%
Palatine	9%		

Characteristics of the Sample

The three libraries in the sample were drawn from three different geographical areas, range in size from 82,400 to 187,000 in annual circulation, from 5 per cent to 25 per cent in proportion of non-resident card-holders, and from 44 per cent to 55 per cent in per cent of holdings juvenile. In order to determine whether these types of characteristics might affect the applicability of retail location theory in different ways, the responses to the key questions in the survey were examined for inter-library differentials, as follows:

The answers of respondents to the question, "What was the time at which the books were checked out?" were quite similar for each of the three libraries, as the following table shows:

	Time of Withdrawal				
	9-11	12-2	3-5	6-8	Total
By Library					
Barrington	18%	14%	32%	36%	100%
Northbrook	31%	7%	35%	27%	100%
Palatine	24%	21%	35%	20%	100%
By Day					
Wednesday	25%	6%	35%	34%	100%
Saturday	30%	36%	34%	--	100%

Similarly, there was a good correlation among the three libraries, and by day of week, on the answer to question, "When was the last time that you checked out books from the library?".

	Last Withdrawal				
	1 week	2 weeks	month	more than month	Total
By Library					
Barrington	50%	35%	5%	10%	100%
Northbrook	40%	50%	5%	5%	100%
Palatine	41%	39%	10%	10%	100%
By Day					
Wednesday	44%	45%	4%	7%	100%
Saturday	37%	41%	12%	10%	100%
All Days	41%	39%	10%	10%	100%

Finally, the distribution of trip characteristics by individual libraries was quite similar. At the same time, there was a marked tendancy for trips with no "necessary" stops to pile up on Saturday. The latter tendancy, moreover, seems quite reasonable: households tend to save up miscellaneous, non-necessary, trips for the Saturday chores.

	Trip Characteristics				
	By Library			By Day	
	Barrington	Northbrook	Palatine	Wednesday	Saturday
Library only necessary stop	42%	37%	39%	39%	37%
Library not necessary, others were	47%	42%	43%	45%	31%
Non necessary stops	11%	21%	18%	16%	32%
Total	100%	100%	100%	100%	100%

Differences among the three libraries on the preceeding three tables are quite minimal--ranging from 16 per cent (between Palatine and Barrington on the percentage drawing books between 6:00 and 8:00 P.M.) to 3 per cent (between Palatine and Barrington on the precentage drawing books between 3:00 and 5:00 P.M.). On the most important of the

variables--trip characteristics--the differences between extremes were 5 per cent and 10 per cent, respectively, for the three categories. Moreover, the latter of these differences (on the category "No necessary stops", between Barrington on the one hand and Northbrook and Palatine on the other) is almost entirely the result of the Saturday-versus-weekdays difference. Withdrawals at both Northbrook and Palatine on Saturday numbered almost twice as many as they did at Barrington, and Saturday is a high day on "No necessary stops."

Comparison of the differential among the sampled libraries, then, offers impressive evidence that the characteristics of trip patterns are common across the geographical sections of the area, and are probably not much influenced by such library characteristics as size, proportion of non-residents, and proportion of juvenile holdings.

In the same connection, it should be noted that the north geographical segment was represented by a library inland from the lake shore; and that the data are thus silent as to whether these patterns prevail among residents within the already-defined and more densely-settled communities from Evanston to Highland Park.

However, in this study the trip patterns to be analyzed are for residents who live inland, with very minor exceptions. And the data may thus be presumed to be a valid representation of trip characteristics for the purposes of the study.

One final word about the reliability of small sample data. In theory, the probable error due to sampling cannot be computed for a sample design in which one or more stages are not random. But in practice, such a computation is a useful guide to the range of accuracy

that may be expected. In the present case, assuming a two-stage probability design, the probable error associated with a statistic of 45 per cent in the basic text table would be plus or minus 4 per cent (standard error of estimate), a range of probable error more than adequate to the task to which the data are put.

INSTITUTE OF URBAN LIFE

November, 1968

Dear Library User:

The enclosed questionnaire is part of a research program aimed at improving and extending public library services throughout the north suburban area.

We ask you to cooperate with this far-sighted program by filling out and returning the enclosed questionnaire as soon as possible. It should take no more than 3 or 4 minutes.

By way of explanation, the Institute of Urban Life is a professional research organization located in Chicago. We have been engaged by the North Suburban Library System--a public body-- to engage in this research, with the cooperation of the public library in your area.

Your name was drawn in a random sample of recent library users. Because of the scientific nature of the sample, it is very important that each person who receives a questionnaire fills it in and returns it to us. No response is unimportant to the study.

Although there do not seem to be any sensitive questions on the enclosed questionnaire, nevertheless all answers will be treated confidentially, and no information will be released--either to the North Suburban Library System or to the general public--which in any way identifies an individual respondent.

Thank you for your cooperation.

Sincerely,

Michael E. Schiltz
Executive Vice President

Adult

INSTITUTE OF URBAN LIFE

Library Use Study November, 1968

Please return promptly. Every questionnaire is important to the goals of the study.

Instructions. According to local library records, you withdrew books from your local library during the last several days. This questionnaire is designed to develop information on the kinds of trips people make while going to and from the library. Please answer as accurately as you can remember, the following questions about your last trip to the library.

1. What was the time at which you checked out the books (try to recall within 1/2 hour)

PRINT TIME HERE: _____

2. How did you travel to the library?

PLEASE CHECK ONE:

Auto ( )
Bus ( )
Walk ( )
Bicycle ( )

3. What stops did you make during your tip to and from the library?

(PLEASE LIST IN CHRONOLOGICAL ORDER, AND INCLUDE THE LIBRARY STOP. INDICATE BOTH THE LOCATION OF THE STOP AND THE PURPOSE OF THE STOP (i.e., TO BUY GROCERIES, BUY DRUGS, SHOP FOR A HAT, GO TO THE PEDIATRICIAN, ATTEND A MEETING, ETC.)

Where stop located (town, name of shopping center, or other identification)	Purpose of Stop	See Question #5

(If you need more space, please use reverse side)

--Go On To Next Page--

4. Were there any stops on the above trip that you had to make that day (i.e., that couldn't be put off until another day?)

PLEASE CHECK ONE: Yes ( )
No ( )

5. If you answered question #4 "Yes", please turn back to question #3 and put a check mark in the box to the right of each stop that you had to make.

6. As well as you can remember, when was the last time (Prior to the trip above) that you checked out books from the library?

PLEASE CHECK THE CLOSEST ANSWER:

about a week earlier ( )
about 2 weeks earlier ( )
about a month earlier ( )
more than a month earlier ( )

7. In order to save us time in plotting your home address on a map, would you please place an "X" where your home is located on the attached map.

If your home address is "off the map," please ignore this question and check below.

PLEASE PUT A CHECK HERE IF YOUR
HOME ADDRESS IS "OFF THE MAP". . . . . ( )

Thank you very much for your cooperation. Please return this questionnaire in the spamped, self-addressed envelope provided, to:

Institute of Urban Life
222 West Adams Street
Chicago, Illinois 60606

- -

FOR OFFICE USE ONLY. PLEASE DO NOT WRITE IN SPACE BELOW.

1	2	4	5	6	7	11	12	13	14	15	16	17	18

INSTITUTE OF URBAN LIFE

November, 1968

Dear Library User:

The enclosed questionnaire is part of a research program aimed at improving and extending public library services throughout the north suburban area.

We ask you to cooperate with this far-sighted program by filling out and returning the enclosed questionnaire as soon as possible. It should take no more than 3 or 4 minutes.

By way of explanation, the Institute of Urban Life is a professional research organization located in Chicago. We have been engaged by the North Suburban Library System--a public body--to engage in this research, with the cooperation of the public library in your area.

Your child's name was drawn in a random sample of recent library users. Because of the scientific nature of the sample, it is very important that each person who receives a questionnaire fills it in and returns it to us. No response is unimportant to the study.

Although there do not seem to be any sensitive questions on the enclosed questionnaire, nevertheless all answers will be treated confidentially, and no information will be released--either to the North Suburban Library System or to the general public--which in any way identifies an individual respondent.

Thank you for your cooperation.

Sincerely,

Michael E. Schiltz
Executive Vice President

Juvenile

INSTITUTE OF URBAN LIFE

Library Use Study

November, 1968

Please return promptly. Every questionnaire is important to the goals of the study.

Instructions. According to local library records, your child checked out books from the local library during the last several days. This questionnaire is designed to develop information on the kinds of trips people make while going to and from the library. Please consult with your child and answer, as accurately as you can remember, the following questions about this trip to the library.

1. What was the time at which the books were checked out (try to recall within 1/2 hour)

PRINT TIME HERE: _____

2. Did the child travel to the library with an adult or on his own?

PLEASE CHECK ONE:
with adult ( )
on his own ( )

The remaining questions should be interpreted according to the answer to question #2. If the child travelled on his own, the questions relate to his trip. If he travelled with an adult, the questions relate to the adult's trip.

3. How did you (child) travel to the library?

PLEASE CHECK ONE:
Auto ( )
Bus ( )
Walk ( )
Bicycle ( )

4. As well as you can remember, when was the last time (prior to the trip above) that you (child) checked out books from the library?

PLEASE CHECK THE CLOSEST ANSWER:

about a week earlier ( )
about 2 weeks earlier ( )
about a month earlier ( )
more than a month earlier ( )

(go on to next page)

5. What stops did you (child) make during your trip to and from the library?

(PLEASE LIST IN CHRONOLOGICAL ORDER, AND INCLUDE THE LIBRARY STOP. INDICATE BOTH THE LOCATION OF THE STOP AND THE PURPOSE OF THE STOP (i.e., TO BUY GROCERIES, BUY DRUGS, SHOP FOR A HAT, GO TO THE PEDIATRICIAN, ATTEND A MEETING, ETC.)

Where stop located (town, name of shopping center, or other identification)	Purpose of Stop	See Question #7

(If you need more space, please use reverse side)

6. Were there any stops on the above trip that you (child) had to make that day (i.e., that couldn't be put off until another day?)

PLEASE CHECK ONE: Yes ( )
No ( )

7. If you answered question #6 "Yes", please turn back to question #5 and put a check mark in the box to the right of each stop that you (child) had to make.

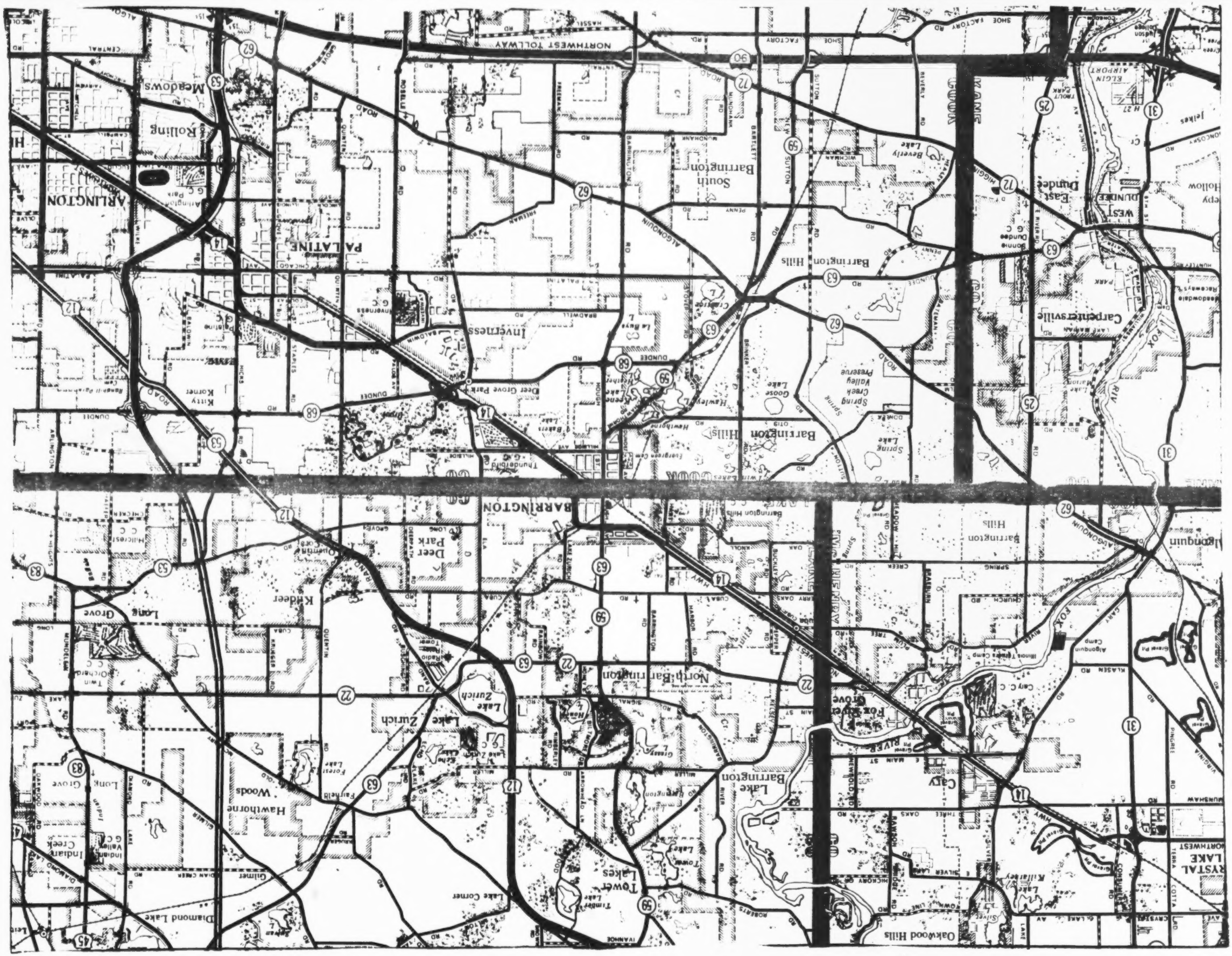
8. In order to save us time in plotting your home address on a map, would you please place an "X" where your home is located on the attached map.

If your home address is "off the map," please ignore this question and check below.

PLEASE PUT A CHECK HERE IF YOUR HOME ADDRESS IS "OFF THE MAP". . . . . ( )

Thank you very much for your cooperation. Please return this questionnaire in the stamped, self-addressed envelope provided, to:

Institute of Urban Life
222 West Adams Street
Chicago, Illinois 60606


NORTHWEST TOLLWAY
ARLINGTON
PALATINE
Rolling Meadows
Inverness
Deer Grove Park
Deer Park
Kildeer
Long Grove
Buffalo Grove
Wheeling
Prospect Heights
Arlington Heights
Mount Prospect
Des Plaines
Elk Grove Village
Schaumburg
Hoffman Estates
Barrington
South Barrington
Barrington Hills
North Barrington
Lake Barrington
Lake Zurich
Hawthorne Woods
Tower Lakes
Lake Cornet
Diamond Lake
Indian Creek
Gilmer
Fairfield
Timber Lake
Spring Creek Valley Preserve
Goose Lake
Spring Lake
Hawley L.
La Buys L.
Beverly Lake
Crystal Lake
Carpentersville
East Dundee
West Dundee
Algonquin
Cary
Fox River Grove
Oakwood Hills
Lake Barrington
Algonquin Camp
Illinois Timber Camp
Fox River
Fox River Golf Course
Fox River Country Club
Fox River Golf & C
Bonnie Dundee G C
Meadowdale Raceways
Twin Orchards C C
Indian Valley G C
Thunderbird G C
Hillcrest C C
Arlington Park
Ranch-O-Mar G C
Inverness G C
Elgin Airport
Fremont Center
Lake Zurich
Lake Barrington
Barrington Hills
Algonquin
Dundee
Crystal Lake
Northwest
Terra Cotta
Pingree
Virginia
Wunsham
Kimball
Hickory
Oak
Three Oaks
Silver Lake
Lakeland
Fairfield
Quentin
Barrington
Algonquin
Dundee
Main St
Lake
Cary
Fox River
Fox River Grove
Oakwood Hills

APPENDIX B

DELINEATION OF RETAIL TRADE AREAS

The retail trade area of a given shopping center, as defined here, is that geographical entity from which the center draws approximately 85 to 90 per cent of its trade.

In this analysis, the trade referred to is that of sales of "convenience" goods--that is, goods with which the shopper is normally quite familiar and which do not ordinarily require him to engage in comparison shopping (as opposed for example, to trade in appliances).

The trade areas were delineated upon the following criteria:

1. Size of the retail center as measured by sales tax receipts in 1967.
2. Accessibility to the highway system.
3. Competition from other retail centers.
4. The impact of natural and man-made barriers.
5. The distribution and density of population.

The technique is one commonly used in market analysis for department store trade, and is at least in part one of subjective approximation. For example, it is first estimated if the trade area lines will intersect, overlap, or fall short of one another. This is done by observing the absolute sales levels of the two retail centers and the density of population surrounding the two centers.[1]

---

[1]Absolute sales levels derived from Retailers' Occupation Tax Receipts. Source: Department of Revenue, State of Illinois, Fiscal Report, July, 1966, through June, 1967: Tax Liability, collected in August, 1966, thru July, 1967.

Once this is done, the boundary is placed between the two retail centers based on the relative difference in sales between the two centers. Thus, if one retail center is twice the size of the other in terms of retail sales, the trade area for the larger will extend closer to the smaller retail center.

The general shape of a given retail trade area is determined by applying this technique along all highways leading from the center, and simultaneously considering factors of relative accessibility, competition, and impact of barriers.

APPENDIX C

SURVEY OF INTERSTITIAL AREAS

After the construction of retail trade and automobile travel distance perimeters, five areas of rather substantial population were identified in which the two perimeter criteria did not yield clear-cut results.

These five areas, displayed on the map in Part II, are:

A. Forest River, which lies east of Mount Prospect at the intersection of Route 45 and Foundry Road.

B. Long Grove--Kildeer, at and to the west of the intersection of Routes 83 and 53.

C. Prairie View-Half Day, at and to the west of the intersection of Routes 22, 45, and 31.

D. Rondout, at the intersection of Routes 176 and 43.

E. Wildwood, in the Gages Lake area at the intersection of Routes 120 and 45.

A random sample of approximately 100 was drawn for each of these five areas from the lists of registered voters as of November, 1968, supplied by the County Clerks of Cook and Lake Counties. While registered voters do not include all the adult residents of an area, registration at the time of a nati.. ' Presidential election is quite high--reaching about 90 per cent in metropolitan suburban areas; and there is no reason to suspect that the travel habits of non-registered adults differ so radically from those of registered voters as to distort the findings.

Questionnaires with return address envelopes were mailed to each person in the sample. These questionnaires were individually tailored to elicit travel information appropriate to each area. A copy of each is attached. After a week, a follow-up letter with an additional copy of the questionnaire was mailed to all non-respondents. Questionnaires were coded so as to avoid duplication of responses to the two mailings.

The overall response rate to this two-wave mailing was 56 per cent, quite sufficient for the supportive purposes to which its data was put. Moreover, response rates from the individual areas were strikingly similar, as the following table illustrates:

Area	Code	Response Rate
Forest River	F	56%
Long Grove	L	56%
Prairie View	P	57%
Rondout	R	49%
Wildwood	G	62%

INSTITUTE OF URBAN LIFE

November, 1968

Dear Citizen:

The enclosed questionnaire is part of a research program aimed at improving and extending public library facilities throughout the north suburban area.

We ask you to cooperate with this far-sighted program initiated by the Illinois Legislature by returning the enclosed questionnaire as soon as possible. It should take less than a minute.

By way of explanation, the Institute of Urban Life is a professional research organization located in Chicago. We have been engaged by the North Suburban Library System -- a public body -- to conduct this part of the study.

One of our tasks is to establish the normal vehicle trip patterns of residents in areas of the North suburbs not now served by public libraries. Your name has been drawn in a random sample from one of those areas.

Because of the scientific nature of the sample, it is very important that each person who receives a questionnaire fills it in and returns it to us. No response is unimportant to the study.

Although there do not seem to be any sensitive questions on the enclosed questionnaire, nevertheless all answers will be treated confidentially, and no information will be released -- either to the North Suburban Library System or to the general public -- which in any way identifies an individual respondent.

Thank you for your cooperation.

Sincerely,

Michael E. Schiltz
Executive Vice President

(Forest River)

INSTITUTE OF URBAN LIFE

North Suburban
Vehicle Trip Pattern Analysis

Area Code: F

November, 1968

PLEASE ANSWER THE ITEMS BELOW AND RETURN IN THE ENCLOSED ENVELOPE AS SOON AS POSSIBLE. THIS IS A RANDOM SAMPLE QUESTIONNAIRE. EVERY RESPONSE IS IMPORTANT.

1. What Community newspaper (local--not Chicago-) do you regularly read?

_____ _____
Name Town

2. Please place an "X" in front of any of the following towns where you bank, where your family doctor has his office, or where you go to church:

( ) a. Mount Prospect
( ) b. Prospect Heights
( ) c. Des Plaines
( ) d. Glenview
( ) e. Wheeling

3. Please place an "X" in front of whichever one of the following towns was the one in which you last made a retail purchase:

( ) a. Mount Prospect
( ) b. Prospect Heights
( ) c. Des Plaines
( ) d. Glenview
( ) e. Wheeling

Thank you

FOR OFFICE USE ONLY: DO NOT FILL IN BELOW

1	2	3	4	5	6	7	8	9	10	11	12

(Long Grove-Kildeer)

INSTITUTE OF URBAN LIFE

North Suburban
Vehicle Trip Pattern Analysis

Area Code: L

November, 1968

PLEASE ANSWER THE ITEMS BELOW AND RETURN IN THE ENCLOSED ENVELOPE AS SOON AS POSSIBLE. THIS IS A RANDOM SAMPLE QUESTIONNAIRE. EVERY RESPONSE IS IMPORTANT.

1. What Community newspaper (local--not Chicago-) do you regularly read?

_____ _____
Name Town

2. Please place an "X" in front of any of the following towns where you bank, where your family doctor has his office, or where you go to church:

( ) a. Mundelein
( ) b. Libertyville
( ) c. Wheeling
( ) d. Palatine
( ) e. Barrington
( ) f. Deerfield

3. Please place an "X" in front of whichever one of the following towns was the one in which you last made a retail purchase:

( ) a. Mundelein
( ) b. Libertyville
( ) c. Wheeling
( ) d. Palatine
( ) e. Barrington
( ) f. Deerfield

Thank you

FOR OFFICE USE ONLY: DO NOT FILL IN BELOW

1	2	3	4	5	6	7	8	9	10	11	12	

(Prairie View -- Half Day)

INSTITUTE OF URBAN LIFE

North Suburban
Vehicle Trip Pattern Analysis

Area Code: P

November, 1968

PLEASE ANSWER THE ITEMS BELOW AND RETURN IN THE ENCLOSED ENVELOPE AS SOON AS POSSIBLE. THIS IS A RANDOM SAMPLE QUESTIONNAIRE. EVERY RESPONSE IS IMPORTANT.

1. What Community newspaper (local--not Chicago-) do you regularly read?

_____ Name _____ Town

2. Please place an "X" in front of any of the following towns where you bank, where your family doctor has his office, or where you go to church:

( ) a. Mundelein
( ) b. Wheeling
( ) c. Deerfield
( ) d. Libertyville
( ) e. Lake Forest
( ) f. Highland Park

3. Please place an "X" in front of whichever one of the following towns was the one in which you last made a retail purchase:

( ) a. Mundelein
( ) b. Wheeling
( ) c. Deerfield
( ) d. Libertyville
( ) e. Lake Forest
( ) f. Highland Park

Thank you

FOR OFFICE USE ONLY: DO NOT FILL IN BELOW

	1	2	3	4	5	6	7	8	9	10	11	12	

(Rondout)

INSTITUTE OF URBAN LIFE

North Suburban
Vehicle Trip Pattern Analysis

Area Code: R

November, 1968

PLEASE ANSWER THE ITEMS BELOW AND RETURN IN THE ENCLOSED ENVELOPE AS SOON AS POSSIBLE. THIS IS A RANDOM SAMPLE QUESTIONNAIRE. EVERY RESPONSE IS IMPORTANT.

1. What Community newspaper (local--not Chicago-) do you regularly read?

_____ _____
Name Town

2. Please place an "X" in front of any of the following towns where you bank, where your family doctor has his office, or where you go to church:

( ) a. Lake Forest
( ) b. Lake Bluff
( ) c. Libertyville
( ) d. North Chicago

3. Please place an "X" in front of whichever one of the following towns was the one in which you last made a retail purchase:

( ) a. Lake Forest
( ) b. Lake Bluff
( ) c. Libertyville
( ) d. North Chicago

Thank you

FOR OFFICE USE ONLY; DO NOT FILL IN BELOW

	1	2	3	4	5	6	7	8	9	10	11	12

(Wildwood)

INSTITUTE OF URBAN LIFE

North Suburban
Vehicle Trip Pattern Analysis

Area Code: G

November, 1968

PLEASE ANSWER THE ITEMS BELOW AND RETURN IN THE ENCLOSED ENVELOPE AS SOON AS POSSIBLE. THIS IS A RANDOM SAMPLE QUESTIONNAIRE. EVERY RESPONSE IS IMPORTANT.

1. What Community newspaper (local--not Chicago-) do you regularly read?

_____ Name _____ Town

2. Please place an "X" in front of any of the following towns where you bank, where your family doctor has his office, or where you go to church:

( ) a. Mundelein
( ) b. Libertyville
( ) c. Waukegan

3. Please place an "X" in front of whichever one of the following towns was the one in which you last made a retail purchase:

( ) a. Mundelein
( ) b. Libertyville
( ) c. Waukegan

Thank you

FOR OFFICE USE ONLY: DO NOT FILL IN BELOW

	1	2	3	4	5	6	7	8	9	10	11	12	